# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



## AMENDMENTS

## LISTING OF THE CLAIMS

1. (Previously Amended) A method for inhibiting the expression of a human DNA methyltransferase gene in a cell comprising contacting the cell with an effective synergistic amount of an antisense oligonucleotide which inhibits expression of the gene, and an effective synergistic amount of a protein effector of human DNA methyltransferase.

2. (Previously Amended) A method for treating a disease responsive to inhibition of a human DNA methyltransferase gene comprising administering to a human, which has at least one cell affected by the disease present in its body, a therapeutically effective synergistic amount of an antisense oligonucleotide which inhibits expression of the human DNA methyltransferase gene, and a therapeutically effective synergistic amount of a protein effector of human DNA methyltransferase.

3. (Previously Amended) A method for inhibiting tumor growth in a human comprising administering to a human, which has at least one neoplastic cell in its body, a therapeutically effective synergistic amount of an antisense oligonucleotide which inhibits expression of human DNA methyltransferaseand a therapeutically effective synergistic amount of a protein effector of human DNA methyltransferase.

4. CANCLEED

5. CANCELLED

6. (Presently Amended) The method of claim 1, 2 or 3 ~~5~~, wherein the protein effector is selected from the group consisting of 5-aza-cytidine and 5-aza-2'-deoxycytidine.

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11. (Original) The method of claim 1, 2 or 3, wherein the antisense oligonucleotide has at least one internucleotide linkage selected from the group consisting of phosphorothioate, phosphorodithioate, alkylphosphonate, alkysphosphonothioate, phosphortriester, phosphoramidate, siloxane, carbonate, carboxymethylester, acetamidate, carbamate, thioether, bridged phosphoramidate, bridged methylene phosphonate, bridged phosphorothioate and sulfone internucleotide linkages.

12. (Original) The method of claim 1, 2 or 3, wherein the antisense oligonucleotide is a chimeric oligonucleotide comprising a phosphorothioate, phosphodiester or phosphorodithioate region and an alkylphosphonate or alkylphosphonothioate region.

13. (Original) The method of claim 1, 2 or 3, wherein the antisense oligonucleotide comprises a ribonucleotide or 2'-O-substituted ribonucleotide region and a deoxyribonucleotide region.

14. (Original) The method of claim 1, wherein said cell is contacted with an effective synergistic amount of at least one antisense oligonucleotide for an effective period of time.

15. (Presently Amended) The method of claim 2 or 3, wherein the human ~~mammal~~ is administered a therapeutically effective synergistic amount of at least one antisense oligonucleotide for a therapeutically effective period of time.

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16. (Original) The method of claim 1, wherein said cell is contacted with an effective synergistic amount of at least one protein effector for an effective period of time.

17. (Presently Amended) The method of claim 2 or 3, wherein the human ~~mammal~~ is administered a therapeutically effective synergistic amount of at least one protein effector for a therapeutically effective period of time.

18. (Original) The method of claim 1, wherein each of the antisense oligonucleotide and the protein effector is admixed with a pharmaceutically acceptable carrier prior to contacting the cell.

19. (Presently Amended) The method of claim 2 or 3, wherein each of the antisense oligonucleotide and the protein effector is admixed with a pharmaceutically acceptable carrier prior to administration to the human ~~mammal~~.

20. (Original) The method of claim 1, wherein the antisense oligonucleotide and the protein effector are mixed prior to contacting the cell.

21. (Presently Amended) The method of claim 2 or 3, wherein the antisense oligonucleotide and the protein effector are mixed prior to administration to the human ~~mammal~~.

22. (Original) The method of claim 1, wherein the cell is contacted separately with each of the antisense oligonucleotide and the protein effector.

23. (Original) The method of claim 22, wherein the cell is contacted with the antisense oligonucleotide prior to being contacted with the protein effector.

24. (Presently Amended) The method of claim 23, ~~wherein the gene encodes a DNA methyltransferase and~~ wherein the contacted cell is induced to undergo apoptosis or is arrested in the S phase of the cell cycle.

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25. The method of claim 22, wherein the cell is contacted with the protein effector prior to being contacted with the antisense oligonucleotide.

26. (Presently Amended) The method of claim 25, ~~wherein the gene encodes a DNA methyltransferase and~~ wherein the contacted cell is arrested in the $G_1$ phase of the cell cycle.

27. (Presently Amended) The method of claim 2 or 3, wherein the antisense oligonucleotide and the protein effector are separately administered to a human ~~mammal~~.

28. (Presently Amended) The method of claim 27, wherein the antisense oligonucleotide is administered to the human ~~mammal~~ prior to the administration of the protein effector.

29. (Presently Amended) The method of claim 28, ~~wherein the gene encodes a DNA methyltransferase and~~ wherein the cell in the human ~~mammal~~ to which the antisense oligonucleotide is administered prior to the administration of the protein effector is induced to undergo apoptosis or is arrested in the S phase of the cell cycle.

30. (Presently Amended) The method of claim 27, wherein the protein effector is administered to the human ~~mammal~~ prior to the administration of the antisense oligonucleotide.

31. (Presently Amended) The method of claim 30, ~~wherein the gene encodes a DNA methyltransferase and~~ wherein the cell in the human ~~mammal~~ to which the protein effector is administered prior to the administration of the antisense oligonucleotide is arrested in the $G_1$ phase of the cell cycle.

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32. (Presently Amended) The method of claim 1, ~~wherein the gene encodes a DNA methyltransferase and~~ wherein the cell comprises a gene whose expression has been inactivated by methylation.

33. (Original) The method of claim 32, wherein expression of the gene whose expression has been inactivated by methylation is reactivated in the contacted cell.

34. (Original) The method of claim 32, wherein the gene whose expression has been inactivated by methylation is the $p16^{ink4P}$ tumor suppressor gene.

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